AWIPS OB5 Release Notes

Section I - New Functionality in OB5

1.0 D2D/TEXT/OTHER APPLICATIONS

1.1 Local Storm Report (LSR) Partial for OB4.2

- The LSR GUI has now adopted the 'official' policy on marine events that get reported in LSRs. The county of the event will be the marine zone and state of the event will be the nearest state within about 60 nmi.

- From the beginning, the LSR GUI could fill in all location info if the user defined Trained Spotter as the source of the event and provided the spotter's identification. Now this method has been implemented for buoys and CMANs.

- Because the determination of a tornado's magnitude (Fujita scale) is not possible until a damage survey has been conducted, all LSR tornado events are created with the "F?" magnitude and will not be editable unless the entire event is edited from the Log page.

- If a location being used by the LSR GUI happened to be far enough from all cities in the LSR city list, the wrong city would be used as the CITY Reference of the event location, when being automatically determined. This problem has been fixed in OB5.

- Occasionally, when starting the LSR GUI, the user would see the message: "Could not purge***completely! Get help!". This did not usually correspond with an actual error. This has been corrected, in OB5 this message will indicate an actual error.

- When the LSR GUI is being used in practice mode, the product PIL that will be used is LSRWRKLSR, as suggested form of the field.

1.2 Radar

- Terminal Doppler Weather Radar (TDWR) data are now available for display. Some sites will not have any TDWRs in their menu. Many will have one on the main menu between 88Ds and "Radar." A few sites will have multiple TDWRs on the menu. Products in the TDWR menu include Z/SRM8, Z/V, four-panel Z/V and Z/SRM8, Z, V, SRM8, spectrum width, and a Unit Status Message. Enhancements have been made to the radar applications (OTR, RPS list editor) to accommodate TDWRs (RMR may include TDWR in OB6). **Not enabled for OB4.2**

- A "Dig Mesocyclone (DMD)" selector is added to the kxxx Graphics menu to display a plan view of mesocylones from the Digital Mesocyclone Display algorithm. This is similar to the "MD" display, but uses five strength categories vice two in the latter, standard progressive disclosure (weaker features appear as you zoom or increase density), and sampling for feature characteristics. **Part of OB4.2**

- When using the Radar Graphics Controls, it is no longer necessary to pan or zoom to see the effect of changes. **Part of OB4.2**

1.3 System for Convection Analysis and Nowcasting (SCAN) Part of OB4.2

- SCAN can now work off of radar products ingested via the SBN. SCAN will analyze identified storm cells for any volume scan and any recognized radar and provide output that is displayable in the D2D from the SCAN menu.

- In OB4, the DMD was made available via SCAN, but New alarms were not implemented. Now, the New alarms are implemented for the DMD and the way is paved for additional rapid update products.

- The occasional problem of the SCAN Storm Cell Table updating with all zeros has been fixed. The fix may have made it into an OB4 Maintenance Release, but as of this writing, that decision had not been made. Note that the fix was a regression from memory mapped byte data files back to regular text data files.

- The Unwarned County Alarm function was misbehaving under certain rare circumstances, this has been corrected to handle more circumstances.

- SCAN uses SBN radar products, to support site back-up – these appear in a new "*SBN/Dial Radars*" Section of the SCAN menu.

1.4 *S*ystem on *A*WIPS for *F*orecasting and *E*valuation of *Se*as and L*a*ke*s* (SAFESEAS) Part of OB4.2

- A one-station list of the reports table will be added to the existing SAFESEAS extension. This will not affect the SAFESEAS Localization or the SAFESEAS persistent background process.

- When the user clicks a station ID in the SAFESEAS extension's station table, a 24-hour table of all reports for the station will be displayed. The table will be sorted by the date-time of the reports with the most recent at the top.

1.5 Text Workstation Part of OB4.2

- The AWIPS start-up menu is generated by the appLauncher application ($FXA_HOME/bin/appLauncher). The appLauncher server starts up on the workstation the first time you post the AWIPS start-up menu after logging in to the workstation, and it

runs persistently for the duration of your session. The menu becomes visible when you post it and disappears once you have made a selection or clicked elsewhere on the display. The menu is defined by the file $FXA_HOME/data/appLauncher/appLauncher.conf, and any files that are referenced by include statements therein. Included files can contain other files. AppLauncher creates log files in /tmp and in directories in the $LOG_DIR/display hierarchy. The log file in /tmp may be helpful in diagnosing syntax errors in the local.conf file.

1.6 Volume Browser/Grid Products **Part of OB4.2**

- A new method of selecting feature locations by ID is added to the Tools and Volume Browser (VB) Tools menus. One can use this "Choose by ID" method to set points, baselines, and Home for conventional locations like METARs and RAOBs, but its primary use is for 88D-identified mesocyclone locations.

- Line width and style can be globally set from new entries in the Display Properties menu. The background display color can be set via a new selection from the Options menu or via the button-3 popup over the display. Note that the background color is affected by the image brightness setting, and that sample color is always white, so that samples may be difficult or impossible to read if you pick a very light background color.

- The Source menu is split into "Grid" and "Other" menus to reduce required mouse movement. The latter includes soundings, METARs, and the new Digital Mesocyclone Display (DMD), among others.

- New fields associated with DMD include Radial Velocity, Feature Strength, Feature Diameter, Shear Mag, and Gate2Gate Shr.

- Also for DMD, the VB includes a new MaxShear plane under Misc.

- Other new fields are Feature Motion ('FeatMot') and wind divergence.

- Ensembles now extend to 192 hours. **No data available to test with OB4.2**

- Now that both GOES-W and GOES-E data are available at all offices (due to changes in SBN transmission), the CONUS-scale images can take advantage of higher-resolution data from both (previously the "local" side was at higher resolution than the other).

- High density winds now includes data from the 3.9 micron channel. **When data available**

- Fire weather zones is now a standard entry on the background maps menu.

- The appLauncher menu (used to start D2D and other applications) now opens cascading menus when the pointer rests on the menu, rather than requiring a click.

- Test watch boxes issued by SPC will now be tagged "TEST...TEST" and drawn with dashed lines.

- Volume Browser Fields now includes Parcel L1 for the 12km Eta. The menu entry is under *Sfc/2D->Convective*.

- DGEX divergence and advection contours are smoothed for easier interpretation.

- HPC 4-7 day guidance grids are added to the Volume Browser, with new source HPCGuide. Fields include max and min temp, PoP, TCC, wind speed/dir, dewpoint, and weather.

- A new 'Weather type' color table is found in the Grid section of the Color Tables menu, for the NDFD weather grid.

- The RAMSDIS water vapor color table is now included in the Sat:WV section of the Color Tables menu.

1.7 Localization **Part of OB4.2**

- The means by which scripting can be overidden (use of the overide functionality with a .patch file) will become much more flexible. This is done by augmenting the default localization scripting functionality with .patch scripts. Note, caution is urged when using this functionality.

- At present, fire weather zones can be set up at local offices. Field users have requested that this capability be made part of the standard localization setup.

1.8 Flash Flood Monitoring and Prediction (FFMP)

- The FFMP display can now provide automatically aggregated Basin Layers**,** aggregating small basins according to the Pfafstetter ID. **Part of OB4.2**

- All FFMP Image displays are now rendered as small basins and considered ‘layers’. This means (for example) that when choosing County Layer, the image will give the same value/color to all small basins for each county, giving the appearance of colored counties

with jagged boundaries. This also yields a couple of Zoom behavior settings in the Basin Table (defaulted to legacy behavior). **Part of OB4.2**

- The Point Data Control (PDC) GUI has been implemented. The PDC is very close to the same as the PDC in HydroView, except the output is displayed in the D2D and thus can be overlaid on any other data that the D2D can display. **Not part of OB4.2**

- The radars for which FFMP will run are now controlled via a text configuration file. These radars can be 'non-dedicated' radars. FFMP will 'see' data from the dedicated radars defined in the list, as well as the non-dedicated, as long as the non-dedicated radars are set to be ingested via RMR. **Partial for OB4.2**

- A street map display in the D2D, which is based on the stream shapefile is delivered to all WFO's on their small basin CDs. **Part of OB4.2**

- For some sites, FFMP would fail to start-up in OB4. This has been fixed in OB5. **Part of OB4.2**

- new xxxx Small Stream Basin Links map on the FFMP maps menu. **Part of OB4.2**

1.9 Site-Specific **Not part of OB4.2**

- Lightning Capability (Lightning Data [SFPA41]) has been added to the Pacific Region Sites

2.0 WATCH WARNING ADVISORY (WWA) **Partial for OB4.2**

- In OB5, WWA is now "self-contained;" that is, the finished product is created within WWA, without final editing in a text workstation window.

3.0 HYDROLOGY

3.1 HydroBase **Not part of OB4.2**

- Primary and Secondary Backup HSA Backup fields have been added to the RiverPro Forecast Groups/Points window.

3.2 Site-Specific

- The Site-Specific Hydrologic Prediction System (SSHP) subsystem that includes two rainfall-runoff models, the Kansas City API Model, and the Sacramento Model requires two new tables to be added to the Hydro Database. These tables are called ArealObs and

ArealFest. Mean Areal Precip data that was previously put into the ProcValue and the FcstPrecip tables, will now be placed instead into ArealObs and ArealFcst, respectively. These tables will be purged by the standard HFS database purge routines, Also the Unitgraph table has been modified with the addition of a 10-character column names "model". **Not part of OB4.2**

- Sites which were not included as OB4.AS sites will receive the DamCREST application for the first time in OB5. **Part of OB4.2**

- Assorted enhancements were performed for the Site-Specific application. It is expected that the OB4 ATAN version of Site-Specific will be the same as the OB5 version of Site-Specific **Not part of OB4.2**

- Enhancements to the TimeSeries application were performed, including some requests from the Western Region **Partial for OB4.2**

3.3 HydroView/MPE **Not part of OB4.2**

- The Station Observation Display feature (a.k.a. Point Data Display) currently in HydroView/MPE will be implemented within the D2D application. This will allow overlay of point data from the IHFS database onto D2D. This work is being performed by OS&T/MDL with significant assistance from OHD/HL/HSEB.

- In the NCEP/Hydro menu, the bottom section is now titled *Local Analyses/Statistical Guidance* and includes a new HPC Station Data submenu containing max/min and 24h PoP MOS station plot products. In addition, the *MOS* section under LAMP/MOS Forecasts now includes multiple products from GFS, GFS Extended, Eta, and NGM MOS in place of the old single MOS Station Plot.

3.4 RiverPro **Not part of OB4.2**

- Enhanced RiverPro has been modified to support VTEC Functions.

3.5 RFC **Not part of OB4.2**

- The RFC Verification program is now hosted on the RFC archiver.

- Updated the SHEFPARM file at the national level and that should be effective in **OB5** scheduled for completion in the spring of 2004.

- The format of the log files (daily and product) has been changed to the log files of the IHFS SHEF decoder.

3.7 RFS **Not part of OB4.2**

- Integrated the new UHGCDATE mod which has a start and end date
- Developed an initial NDFD-to-NWSRFS pre-processor
- Upgraded the NWSRFS fs5file locking process to allow ESP to run with batchpst and the pre- processors
- added new features to the RES-J operation
- making FLDWAV dump out files needed by the FLDVIEW application
- ported ts2oh and gs2oh to Linux
- completing the esp hindcast generating GUI (formerly espvs)
- completing 49 HSD Bug List bug fixes

4.0 SYSTEM

4.1 Crons **Part of OB4.2**

- To add cron jobs, update **SITEdx1cron**, **SITEdx2cron**, **SITEpx1cron**, and/or **SITEpx2cron** crontab file(s) in **/etc/ha.d/cron.d.** These crontab files are system crontab files, and can run cron jobs for multiple different users, the user name must be included as the 6th field in the table. Note the updated crontab files must be installed in the **/etc/ha.d/cron.d**/ directory on all (DX/PX) nodes. This change will take place when a package is restarted or when the resource group is swapped. To immediately activate the crons copy them from /etc/ha.d/cron.d to /etc/cron.d and type “touch /etc/cron.d” as root.

- You will no longer view baseline crons using crontab -l (on PXs and Dxs).

  Baseline crons will be listed in /etc/cron.d/*

  Format of the file(s) is:

  <Run-Time> <User> <Command>

  To view all active fxa crons for px1:

grep fxa /etc/cron.d/*

Instead of /etc/cluster/configure.crontab, /awips/ops/bin/hb_config_crontabs is used to configure crons.

Cluster Commands

Cluster Status

Old Command: clustat
New Command: **hb_stat**

Cluster package: start/enable run
Old Command:cluadmin --service enable <package>
New Command: **hb_run <package>**

Cluster package stop/disable/halt
Old Command: cluadmin --service disable <package>
New Command: **hb_halt <package>**

Cluster package:swap/relocate (from the machine the package will run on)
Old Command: cluadmin --service relocate <package> <machine>
New Command: **hb_swap <package>** <machine>

4.2 Freeware/COTS Software

- Stack tracing capability has been added. This will be extensively used by the developers and for last-resort problem diagnosis at sites, when the problem is impossible to reproduce on test systems. **Part of OB4.2**

- Gdome 2.0.8.1 (Linux) **Not part of OB4.2**

- Dbdelete 3.2 (HP) **Not part of OB4.2**

4.3 Processes **Part of OB4.2**

Many processes previously on PX1 and PX2 have been moved to DX1 or DX2 in AWIPS OB5.

Linux (unlike HP-UX) reports multi-threaded processes multiple times when using the 'top' and 'ps' commands. This includes such processes as the notificationServer and many decoder processes. You can tell that it is actually a multi-threaded instance since the

process will have a parent of the same name. This was documented as DR 15657 which was closed with this release note.

- *IFP, GFE, NotifytestProd* have been moved from PX1 to DX2
- The following Decoders: *BinLightning, Satellite, Grib, Maritime, Profiler* have been moved from PX1 to DX1
- The following Decoders: *BufrMosDecoder, WarnDB, StdDB, Collective, Raob, aircraft, ACARS,* have been moved from PX2 to DX1
- The *BufrDrivers* have been moved from PX2 to DX1
- *textNotificationServer* have been moved from PX2 to PX1
- The *CommsRouter* and *acqservers* have been moved from PX1 o DX1
- The *asyncScheduler, Xyplex* host have been moved from AS1 to PX1
- The following Decoders *Metar, Synoptic* and *RAMOS* have been moved from AS1 to DX1 and also *RadarStorage, handleGeneric* have been moved from AS1 to DX1
- *RadarTextDecoder* has been moved from DS1 to DX1
- LDAD routers have been moved from DS1 to PX2.
- *LAPS* has been moved from AS2 to PX1
- *DNS*, *NTP* and print spooler functions have been moved from AS1 to DX1
- *NWWSScheduler, notificationServer* and *Damcrest* have been moved from AS1 to PX1
- *purgeprocess, SBNebNoMonitor, VIR test, print spooler* and *SRUprocessor* have been added to the PX1
- The normal number of acqserver process running on DX1 is about 15
- The number of BufrDriver processes on DX1 is 5

4.4 Purge **Part of OB4.2**

- Intelligent Purger has been installed in OB5. Capability to the notificationServer to communicate with the purger using IPC has been added. The purger sends a "purge

notification"to the notificationServer. On receipt of the purge notification, NotificationServer::receivePurgeNotification() updates its time cache by calling DepictableInventory::updatePurgeInfo(DataKey dKey, SeqOf<AbsTime> purgeTimes). The purgeTimes argument is the list of the times of the files that have been purged. updatePurgeInfo() checks its cache of file times for the particular data key, dKey. If there are files in the cache that have been purged based on the times in purgeTimes, then these times are removed from the cache for that key.

- The notificationServer manages its cache of file times by intermittently doing directory searches and removing the purged files from the cache. With the intelligent purging this interval, called PURGE_CYCLE, has been changed from 20 minutes to 2 hours. The 2-hour period is an arbitrary selection.

4.5 notificationServer **Part of OB4.2**

- The notificationServer has been moved from AS1 to PX1. The notificationServer manages cache better – see the Purge section above.

4.6 Database Engine **Not part of OB4.2**

- The PostgreSQL DBMS has been selected as the next Relational Database Engine for **AWIPS**, and will replace Informix (sometime after OB5) as the HP-UX DS machines are retired and replaced by the Linux DX machines.

4.7 System Commands **Not part of OB4.2**

- The *telnet, ftp* and *rlogin* commands have been completely replaced with *ssh, sftp,* and *slogin* commands, respectively, in OB5.

4.8 SPG Software **Partial for OB4.2**

- AWIPS will ingest the TDWR data from the Supplemental Product Generator (SPG) using the same capability found in the ingest of the 88D data from the OpenRPG. The SPG will connect to the radar, receive the raw data and generate products in the Nexrad format.

  The RPS list and One-time request mechanism will include the TDWR.

Configuration Changes

- TDWR radar site information for radar files.
- TDWR radar IDs (3001-3005) & ICAOs. (Txxx, e.g. TBWI)
- SPG network addresses & ports for communications managers.
- SPG base products & product IDs for data base, RPS & OTR product requests.
- TDWR unique elevation angles to lists for OTR and RPS D2D applications & menus.

Software Modifications

- D2D supports TDWR reflectivity product spatial resolution of 300m for long range & 150m short range.
- Present only local SPG TDWR VCP angles in GUI menus for OTR, RMR(OB6), RPS & display selection.
- Modified RPS list & list editor to support "all scans" request feature.
- Modified D2D to support TDWR general status message.

4.9 Satellite Decoder **Part of OB4.2**

- Now that the WestCONUS and EastCONUS higher-resolution satellite sectors are being sent on the same SBN channel, it's possible to create improved CONUS scale satellite products by combining these sectors, rather than using one or the other with the lower-resolution SuperNational data.

4.10 asyncProdScheduler **Part of OB4.2**

- The new asyncProdScheduler(APS) spawns separate heavyweight port-controlling processes to handle mux I/O. Each child process is connected to the parent scheduler processes via a pipe, which is encapsulated in a DescriptorEvent Client and handed to the EventDispatcher.

- I/O with textNotificationServer, TextDB_Server_Read and TextDB_Server Write is done with existing ParametrizedMsgs and Receiver-based interfaces.

4.11 BufrMosDecoder **Part of OB4.2**

- Depictables have been created for the D-2D to display MOS data in station plot format.

4.12 GOES High Density Winds **Part of OB4.2 when data available**

- 3.9 micron High Density Winds have been added. This gives a wind profile in the lower atmosphere, typically below 800 mb, but can be as high as 475 mb.

4.13 GRIB Data **Not part of OB4.2**

- National Ice Center (NIC) data will be available on Grid 218 once daily

- National Ice Center (NIC) data will be available on Grid 242 once daily

4.14 Redbook and Verification **Not part of OB4.2**

- Verification will be retired for release OB5